

Historic, Archive Document

Do not assume content reflects current scientific knowledge, policies, or practices.

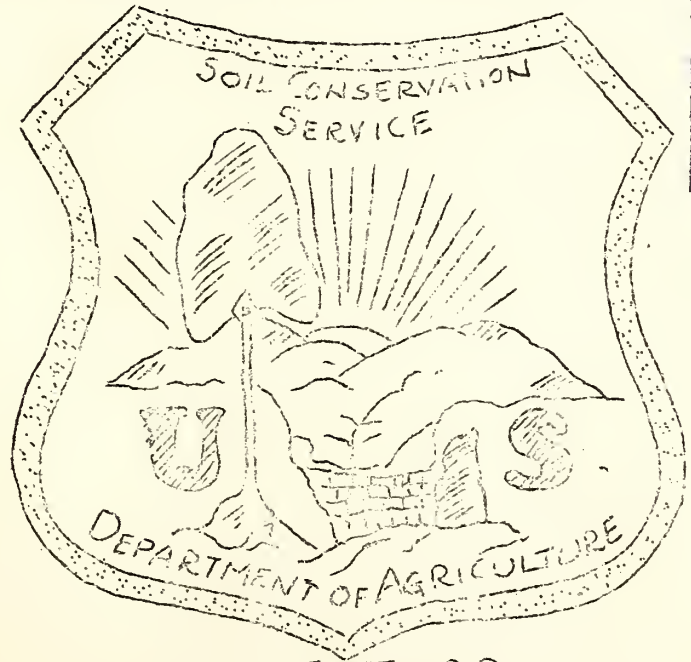
V. 1
no. 3 5039C

CROOKED CREEK CRIER



OCTOBER - NOVEMBER

LIBRARY
RECEIVED
★ MAR 18 1942 ★
U. S. Department of Agriculture



19

35

PROJECT 29
INDIANA, PENNSYLVANIA

V. 1, no. 3

1870
1875

1870
1875

" CROOKED CREEK CRIER "

Published periodically at Indiana, Pennsylvania by the
SOIL CONSERVATION SERVICE, UNITED STATES DEPARTMENT OF AGRICULTURE

Dr. Austin L. Patrick, Regional Director

Editor -- J. Kenneth Terres
Assisted by -- Charles W. Brinkman

Contributors -- Soil Conservation
Service

Volume 1

October-November 1935

No. 3

* * * * *

* * * * *

* A "NEWS" MESSAGE FROM THE DIRECTOR *

* * * * *

* The Crooked Creek Indiana County Project was *

* authorized only a year ago this month of October. The *

* first Soil Conservation Camp was established on April *

* 25th at Home, Indiana County, Pennsylvania. Since then *

* the demand for erosion control work by the people of the *

* State has resulted in a rapid expansion of the original *

* program. An interesting development is the fact that the *

* most conservative farming regions are requesting erosion *

* control projects. This is probably not surprising in the *

* light of the fact that the Agricultural Commission of the *

* American Bankers Association has this year directed their *

* efforts towards furthering soil conservation. *

* * * * *

* A 25,000 acre project has been established and is *

* getting off to a very fine start in Lancaster County. *

* The Project Leader, Mr. Norman E. Garber, is receiving *

* requests from farmers daily to make plans of their farms *

* and to show how erosion may be controlled. *

* * * * *

* A second recently approved watershed project is *

* located in the fertile limestone valley section in *

* Franklin County near Waynesboro. The Soils survey men *

* are getting maps made of the farms in this region and *

* the contact men are on the job. *

* * * * *

* The third new watershed project is located in the *

* Beaver Run section of Westmoreland County. A camp was *

* located there last summer and a number of farms have *

* already been signed up. *

* (Continued on next page) *

* * * * *


* * * * *

(Continued)

Eight new C.C.C. Camps were assigned to the Soil Conservation Service. Six of these camps are in operation at present and before long we are expecting the other two. In Clarion, Jefferson, York, and Huntingdon Counties the camps will do soil conservation work on lands not set up as watershed projects. All of these camps, with the exception of the one for Huntingdon County, are being operated. The farmers in these camp work areas are all cooperating in a very excellent manner

In addition to this, a forest tree nursery is being operated by our service in Lancaster County and another is now being started in Indiana County. Nearly seven hundred men are gathering forest tree seeds in various parts of the State, to supply erosion control projects throughout the country with seedling trees. At Pennsylvania State College, an erosion experiment station has been set up for the purpose of working out and demonstrating proper means of controlling excessive losses of soil and water. The School of Agriculture of the Pennsylvania State College is cooperating with the latter project.

The above information indicates the wide scope of the work as it is being carried on in Pennsylvania in an effort to curb soil erosion.


Austin L. Patrick
Director, Crooked Creek Project



DUTIES AND PROGRESS OF THE CONTACT DEPARTMENT

The Contact Department's job is to formulate an erosion control layout for the individual farms of the watershed. The men in this department visit every farmer who has in some way indicated his interest in the program. The first visit is chiefly for the purpose of explaining fully to the farmer the entire set-up and how an erosion control program functions on the farm. The contact man and the farmer then go over the farm, or, later perhaps by appointment, to decide on the best cropping plan.

An erosion control program is simply a program for the CORRECT USE of the land. Land is correctly used when each field is treated according to its particular adaptation. Briefly this means reforestation for very steep and badly eroded slopes, permanent pasture or permanent hay for less steep and less eroded slopes, strip cropping and erosion control rotations for areas not too steep to be safely cultivated, and good farming methods for slopes of less than five percent. The result will be less runoff of rain water, soil loss reduced to a minimum, and a gradual increase of fertility and productivity on the farm.

Every farmer owes it to himself and to his family to study the aims and purposes of the Soil Conservation Service. He should get the facts from an S.C.S. representative and not confuse this service with other organizations.

The farmer should pay no attention to wild rumors and false prophets--if he is interested in the program he may call in person at the office of the Service or write or telephone. This will incur no obligation and all services are free.

"Ask the man who owns one," is the slogan of a well known automobile manufacturer. Likewise we suggest, "Ask the man who is a cooperator," particularly one who has been a cooperator long enough to have received some of the benefits of the Service.

Number of cooperators.....	131
Total number of acres under agreement.....	13,175
Number of acres to be treated.....	1,755
Acres of crop land retired to trees.....	182
Acres of crop land retired to pasture.....	473
Acres of crop land retired to permanent hay.....	679
Total acres retired from cultivation.....	1,335
Acres of pasture land retired to trees.....	234
Number of acres strip-cropped.....	4,849

MORE ENTHUSIASTIC TESTIMONIALS FROM OUR COOPERATORS

"I believe in soil conservation work. If our farm lands are neglected and subjected to erosion it not only destroys the value of our farms but the towns they support become deserted villages. There was a time when a piece of woods was burned over to insure a good crop of berries. Today this would be practically a criminal offense. If you burn down your house you would probably be arrested for it, but you can take a piece of land that is more valuable and in a few years, by careless and indifferent farming, destroy it for future use and nothing will be said or done about it. I believe that one of the permanent results of this work will be that sentiment will be created that will not allow such farming to be tolerated. For years the Federal Government has been spending great sums of money in the west to reclaim land, and it is only fair that some money be spent on similar work in Pennsylvania--particularly at this time when we are spending large sums to relieve unemployment. The only way to save this money is to use it on projects of permanent value..."

J. Clويد Rinn,
Indiana, Pa.

"I believe if your theory is followed out it will be a help to we farmers in the future, and also to our later generations as it replaces old forests, conserves the soil and surely will give us more permanent pastures..."

Charles A. McMillen
Indiana, R. D. #7

"I believe that the Soil Conservation program is a fine thing. The methods of strip-cropping and planting trees on steep hillsides is the only way to keep our soils from washing away. The Soil Conservation Service has built me a far better fence than I could build, and have furnished me with lime, fertilizer and seed. The pasture that was limed is far greener than I have seen it in many years..."

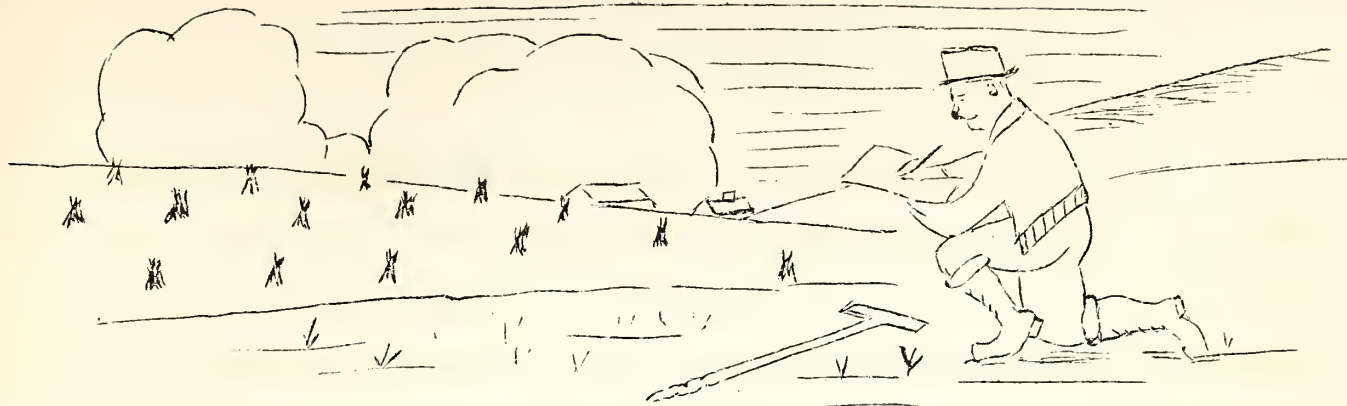
W. C. Jamison
Home, R. D. #2

"The farmers of the Crooked Creek Watershed are indeed fortunate to have been selected for this Erosion Experiment. While we knew that we were losing a great deal of fertility after every heavy rain, we did not know just how to prevent it. The Erosion people have shown us the way, by strip farming, by permanent pasture, and the planting of trees.

Roy McElhoes
Home, R. D. #1

LIST OF COOPERATORS SIGNED SINCE THE AUGUST EDITION OF THE "CRIER"

100. Elkin, Alexander C.	Creekside, R. D. #2
101. Thomas, W. R.	Indiana, R. D. #6
102. Fulmer, George	Shelocta, R. D. (Arm. Twp.)
103. Myers, William H.	Clymer, R. D. #1
104. Marshall, Albert C.	Creekside, R. D. #1
105. C.B.C. Corporation	Indiana
106. McMillen, Laura A.	Chambersville, Pa.
107. Kimmel, Jerry F. & Nobel C.	Shelocta, R. D. #1
108. Kline, Harry C. & Elmer P.	Shelocta, Pa.
109. Wood, Alonzo	Shelocta, Pa.
110. Salsgiver, Andrew R.	Indiana, R. D. #7
111. Walker, Ortho O.	Rural Valley, R. D. #1
112. Miller, Mary M.	Shelocta, R. D. #1
113. McMillen, Catherine B.	Home, R. D. #2
114. Kerr, Charles W.	Shelocta, R. D. #2
115. Broskin, John	Indiana, R. D. #1
116. Kline, Florence	Marion Center, R. D. #1
117. Keeler, George E.	Shelocta, R. D. #1
118. Bagocus, Louis	Home, R. D. #2
119. Byers, John M.	Indiana, R. D. #6
120. Weiss, Lewis	Shelocta, Pa.
121. Reefer, Wilson E.	Rural Valley, R. D. #1
122. Lightcap, E. R. & W. E.	Home, R. D. #2
123. Reefer, Kelly	Rural Valley, R. D. #1
124. Rowe, Harry C.	Shelocta, Pa.
125. McClure, Mrs. Elizabeth	Indiana, R. D. #2
126. Kimmel, Edgar T.	Shelocta, Pa.
127. Bash, Alanzo U.	Shelocta, R. D. #3
128. Smith, Frank G.	Shelocta, R. D. #1
129. Schuerger, George J.	Creekside, R. D. #1
130. Weiss, Fred	Marion Center, R. D. #1
131. Walker, John E.	Home, R. D. #2



THE SOILS INVENTORY DEPARTMENT TELLS OF.....
"SOIL TYPES OCCURRING IN THE CROOKED CREEK WATERSHED"

The Soils Division has now completed a detailed erosion survey on 90,000 acres---nearly three-fourths of the total project area. This survey forms a valuable study of soils, land use, slopes and erosion on the entire project, as well as forming the basis for erosion control plans on cooperating farms. The soil surveyors are covering the remaining land in the watershed as rapidly as possible, and hope to finish this part of the work before winter.

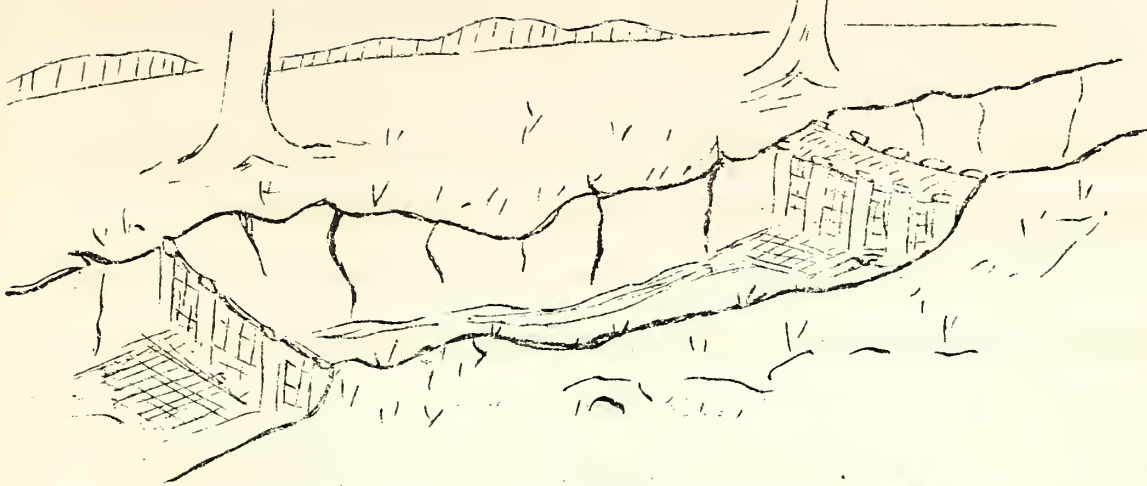
Most of the soils in this locality are rather shallow with bedrock occurring in many instances within two feet or less of the surface. These shallow soils derived from light colored shales and sandstones belong to what our soil surveyors call the Gilpin series. Gilpin silt loam, shaly silt loam and gravelly silt loam are important types, while there are limited areas of Gilpin loam, sandy loam, stony sandy loam, etc.

An undisturbed area, as in woods, of Gilpin silt loam has about an inch of nearly black leaf mold under the leaf litter. Beneath this the upper inch of the mineral soil is dark grayish-brown silt loam which grades into a yellowish-brown silt loam. From a depth of about eight inches and extending twelve to twenty inches in depth, the soil is brownish-yellow heavy silt loam containing many rock fragments and shale chips. Beneath this is the parent rock --usually shale or thin-bedded sandstone.

There are several other soil series and types common to this region. Ernest silt loam is a soil occurring on many lower slopes. The surface soil resembles that of the Gilpin silt loam, but the sub-soil extends to a much greater depth and has a mottled color as a result of imperfect drainage. Rayne silt loam is found on ridge tops and gently rolling areas. It is considerably deeper than the Gilpin soil. Covode silt loam resembles Rayne silt loam but has imperfect drainage and therefore a mottled sub-soil. Upshur clay is a red soil which occurs in small areas. Meigs silty clay loam is a mixture of Upshur and Gilpin material. The Pope, Philo and Atkins soils occur on flood plains along streams where there is occasional overflow.

The amount of soil eroded from fields is estimated by comparing field soils with undisturbed soils occurring in the woods. A soil that has been plowed will have a uniform layer extending to a depth of about six inches. If there has been recent severe erosion this layer will be partly gone. If the plowed layer contains bits of yellowish sub-soil mixed through it, there has been considerable erosion before the land was plowed the last time.

Since the Gilpin Soils have a shallow surface soil, and the unweathered shale material is in many cases only twelve to twenty inches deep, erosion of the productive top-soil is especially dangerous. Once this shallow layer of surface soil is removed, the productivity can be restored only at a cost that is practically prohibitive. The conservation of surface soil is thus more important here on our Gilpin soils than in some other locality where the surface soils are deeper or the sub-soils more productive.



THE ENGINEERING DEPARTMENT EXPLAINS.....

THE CONTROL OF EROSION BY THE USE OF WATER DIVERSION STRUCTURES

Three types of soil erosion by water are recognized. They are:

(1) Sheet erosion, or the removal of thin layers of soil by water of an evenly distributed flow: (2) Rill erosion, which results from concentration of water in motion into rills or tiny gullies: (3) Gully erosion, or the effect of water in motion when concentrated in relatively large volumes, resulting in large, deep gullies.

Control of any of these types of erosion may be effected by controlling the flow of water which causes it. Methods of plowing, location and types of areas of cultivated soil, protection of these cultivated areas by planting up adjacent areas into vegetation are very valuable methods of increasing soil absorption of water, or in retarding the velocity of its flow.

Additional methods of control are used in cases where the grade and length of a slope produce conditions favoring rapid flow of an appreciable amount of water. Following a heavy rainfall this water is not absorbed by the soil and is known as "run-off".

Water-diversion structures are designed to intercept run-off at strategic locations.

It is then diverted through a channel at a low rate of speed to a point where its harmful effects can be minimized and where it is discharged.

Three general types of diversion structures are (1) the diversion ditch, which is placed nearly horizontally across a sloping land surface, and is intended for use as a diversion water-course only: (2) the terrace which in effect is a wide, shallow diversion channel with gently sloping banks over which agricultural machinery may be operated: and (3) the "diversion terrace", which may be described as a very wide, shallow diversion ditch, or a relatively narrow terrace with sloping banks and a vegetated channel.

The three types of structures have several common characteristics, which are : (a) A very slight grade which will cause the intercepted run-off water to flow at a low rate of speed. This will result in a minimum of "scouring", or deposit of silt; (b) Such structures often are several in number and placed closely enough together to prevent the accumulation of water in a large volume. This large amount of water would have a high rate of speed and would be destructive as uncontrolled run-off; (c) While all three structures improve conditions for absorption of water by the soil, they must also discharge the excess water.

Any of the three types may discharge into a well stabilized natural water-course when such drainage is available. Artificial channels or other methods must be used where natural drainage is absent. A small diversion ditch may discharge over the edge of a level barrier, such as a plank or a hewn log, placed across the outlet. Over this plank or log, the water is discharged in a shallow, broad sheet of uniform depth, usually at right angles to the direction of its flow through the ditch channel.

An outlet of this type must be in a location where the slope of the ground favors the spreading out of the discharged water and where vegetation insures against erosion.

A series of water diversion structures, each of which intercepts and takes care of a large volume of water and require an artificial outlet, often discharge into a common outlet channel. This channel is constructed for this purpose. Outlet channels are well protected against erosion by vegetation established by seeding or planting. These channels have permanent check-dams constructed throughout their length. The dams are so placed that the bed of the channel is nearly level from the top of one dam to the foot of the one next above. The water passing down the outlet channel makes the descent in a series of vertical drops over the dams. These dams must be protected against undercutting, by the use of non-erosion "aprons". The sides of the channel below are likewise protected by the use of these "aprons".

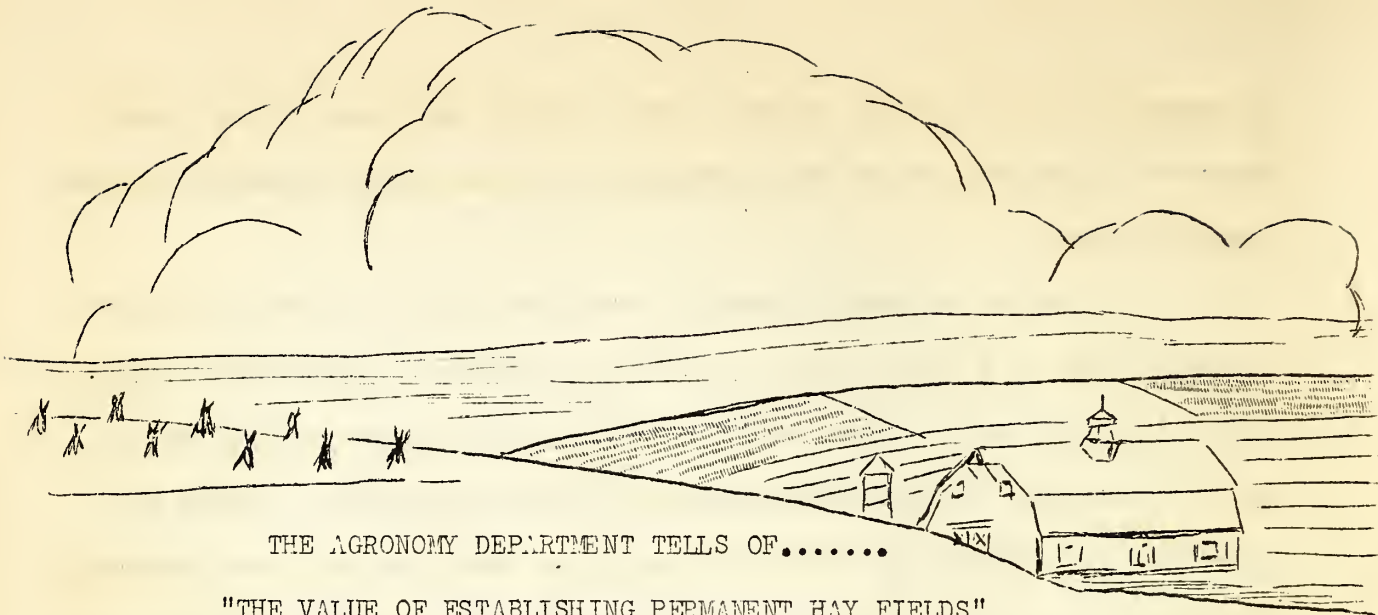
When the selections of types, locations and designs are made correctly, water-diversion structures are of very great value as mechanical aids to Soil Conservation.

EDUCATIONAL ACTIVITIES

One of the most important activities of the Soil Conservation Service is that of education. It is of greatest importance that everyone be informed of the Soil Conservation program and the results that are being obtained from this countrywide demonstration.

Since the inauguration of this Service in Indiana and Armstrong Counties, approximately 160 lectures have been given before a great variety of audiences in Pennsylvania. Farmers' organizations, schools, Service clubs, church organizations and 4-H clubs represent only a few of the many types of audiences that have been addressed by various members of the staff of the Indiana Project.

The Soil Conservation Service invites the public to take advantage of these free lectures, many of which are illustrated with motion pictures and lantern slides.



THE AGRONOMY DEPARTMENT TELLS OF.....

"THE VALUE OF ESTABLISHING PERMANENT HAY FIELDS"

Permanent hay is usually composed of a mixture of alfalfa, clover and grasses. A mixture produces not only a better balanced ration but a more nutritious and palatable feed for stock. Timothy and clover afford an excellent ground covering until the alfalfa becomes well established. After a year or two the clover will die out leaving the stand composed mostly of alfalfa and timothy.

The Soil Conservation Service is recommending three permanent hay mixtures, besides alfalfa, for use on various types of soil and for different farm conditions. These mixtures together with two pasture mixtures were discussed in detail in the last issue of the Crooked Creek Crier.

A good stand of permanent hay may be obtained from either early spring or late summer seedlings. To be most successful in spring plantings the seeding should be done as soon as possible after the frost is out of the ground. For the best success from late summer seedlings the land should be well worked during the latter part of July and the first part of August to insure a well packed seed bed free of weeds. The most preferable seeding time for late summer is between August 10 and 25 as this allows time for the young plants to become well established before freezing weather.

In this section the alfalfa and clover are usually sown with a nurse crop of either winter wheat and timothy, or with oats or barley in the spring. If winter wheat is used as the nurse crop, timothy should be drilled in with wheat in the fall, and the alfalfa and the clover sown in the spring. Where moisture is very limited and a cash grain crop is desired, a good permanent hay stand may be obtained without a nurse crop. Without a nurse crop weeds are liable to cause damage to the new seeding unless particular care is taken in the preparation of the seed bed to free it from weeds.

The amount of lime necessary to satisfy the soil requirements should be determined by soil tests. In general the soils of this section require from $1\frac{1}{2}$ to 3 tons of finely ground limestone per acre for the most satisfactory results. While not altogether necessary, it is a good plan when applying lime to apply one half the total amount before plowing and the remaining half should be put on and harrowed in well before seeding. This insures a more even distribution of the lime throughout the plow layer than might otherwise be the case. In any event, the lime should be well worked into the soil before the seed and fertilizer are sown.

The Soil Conservation Service is recommending 400 pounds of complete fertilizer per acre for permanent hay fields. In cases where winter wheat is used as the nurse crop, it is well to apply only half of the fertilizer in the fall with the wheat and timothy and the remainder applied just before sowing the alfalfa and clover in the spring. This system insures the permanent legume seeds of the full advantage of the fertilizer.

It is best to inoculate all legume seed unless good stands have been produced on the field within the last few years. Alfalfa and sweet clover require the same strain of bacteria which, however, is a different bacteria from that required for red and alsike clovers. It will therefore be necessary to inoculate alfalfa and clover seed separately, then mix the seed when sowing. Leaving the seed out of the ground for much longer than three days after inoc-

ulation may cause serious injury to the bacteria. A good stand of legume hay is one of the farmer's greatest assets, not only from a standpoint of soil conservation but also from a plant food conservation viewpoint. Therefore any steps taken toward the establishment of a good stand of permanent hay will go just that much farther in maintaining the fertility of our lands.

UNUSUAL FACTS

DID YOU KNOW THAT --

1. If the slope of one field is four times steeper than another, rainfall flowing down this steeper slope will run off twice as fast, the cutting power of this water run-off will be 4 times greater, the power to carry soil will be 32 times greater and the size of particles it can carry will be 64 times greater!

2. The greatest amount of height growth of trees occurs late at night, while the least growth occurs on clear days and in the middle of the afternoon. About 33 percent of the growth is made during the day, while 67 percent is made at night.

3. The gizzard of a bird is a truly remarkable organ. Mallard ducks are known to eat hickory nuts. As the hard nut enters the gizzard its muscular walls contract and crush the nut into pieces. We can readily understand from this illustration how such small birds as bob-white quail can eat acorns and digest them.

4. That the tomato and the potato are so closely related that one can be grafted on the other and both belong to the deadly nightshade family.

5. That the common blue violet sometimes blooms in October. These violets have been found blooming late in October 5 miles North of Indiana, Pa., after nights that were cold enough to make ice $\frac{1}{2}$ " thick.



FARM MANAGEMENT AND RURAL LIFE

MANY FARMERS HAVE ASKED, "WHY A SOCIAL SURVEY?" THE QUESTION IS HERE ANSWERED BY HOWARD BONSER, SOCIOLOGIST AT PENN STATE.

We sat on the plow discussing things in general. Two large bay horses seemed glad to wait while we chatted. Mr. ---, a man of fifty, had successfully farmed the home farm since he was a youngster. Both barn and house had been painted within the past two years. The poultry house, copied after a neighbor's, was already cleaned for a new brood of chicks. The farm to all appearances was above the average in productiveness, and wholly desirable as a place on which to live happily.

I began asking Mr. --- questions about crops and livestock--questions which were to be compiled to show profitable practices with respect to fertilizer, feed, seed, etc.; also questions which would show the farming types most profitable under local conditions; information designed to help the contact men to be of greater service to cooperating farmers in allocating fertilizer, seeds, etc., and in initiating an erosion control plan that will be in keeping with the best farm management practice in addition to keeping soil on the fields where it belongs.

Later on I asked Mr. --- what organizations were active in his community and how frequently he attended church, grange and social clubs.

"What does that have to do with soil erosion?" asked Mr.---

"They are indications of community life," I replied. "The real objective of this whole program is to build up a satisfying life. If the

lime, fertilizer and seed sent in through this agency were distributed promiscuously, there would be a slight crop increase, temporarily but with no permanent result to posterity. If these same materials were used to establish pastures, with field crops on hillsides planted in alternate strips with grass, the soil would be conserved for future generations--something highly desirable. However, while this is being done, why not follow those practices and types of farming that will make the most money in addition to conserving the soil?

"But, then, when this is all done, what is it for?" Just this: that those living on the soil may have careers as remunerative and as satisfying as corresponding careers in the city. This is the high aim of rural social studies and of this project. We cannot achieve a high level of living without strong community institutions. The very life of a community flows through its institutions. The family, the church, the school, and the organizations must all be active and healthy if people are to attain a satisfying life. Moreover, these institutions must be supported by all if they are to remain healthy. This is why we are asking how often you attend meetings of each organization. Meetings take time. We are asking what conveniences are in the home, such as running water, power washer, etc., as indicators of ease and possible leisure. Then, too, if the project is successful, increased income and leisure should manifest themselves in a greater use of books and literature by farm people, as well as in a greater interest in their organizations."

"So you see we are picking out a few items of living here and there which should serve as a measure of the higher life, much as a chemist would analyze food by testing for certain ingredients. Now, if after the soil conservation program has been in progress several years, there have been, among other gains, an increase in home conveniences, in attendance at organization meetings and in reading habits, we can be certain that human values accruing to the cooperators and to the community at large from the project have been achieved."

HILLSIDE DRAINAGE

SOUND METHODS OF PREVENTING TOP-SOIL LOSSES.

Land drainage is commonly known as the removal of water from lowlands and swamps for the purpose of reclaiming such areas for agricultural purposes. Until quite recently little attention was given to the drainage of hillsides. However, hillsides often need some type of drainage channel that can be employed without serious erosion of top-soil resulting.

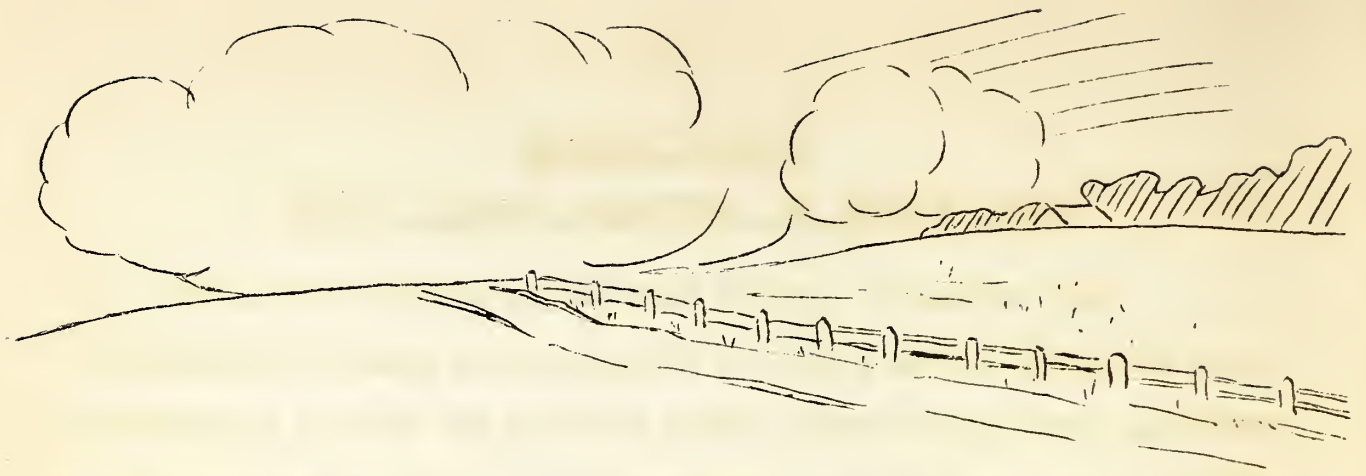
The primary purpose of draining swamps and lowlands is to accelerate the removal of the water from the area; the drainage of hillsides is to slow down the removal of water and to prevent soil losses and formation of gullies.

Various methods are employed by the Soil Conservation Service for the control of run-off water on hillsides. Among these methods are terracing, digging of diversion ditches, and the planting of vegetative covering.

A terrace is that type of ditch that is adaptable to good farming operations. The water is collected on the slope and conducted to an outlet channel that is protected against erosion, either naturally or artificially.

Diversion ditches are being used in the Crooked Creek Watershed quite extensively. The water is diverted away from gullies and emptied into a natural drainage channel, or is discharged on a well-sodded slope where serious washing will not occur.

At many points in the Crooked Creek Watershed serious gullies have been controlled by diversion ditches and the loss of precious top-soil definitely halted.



THE FORESTRY DEPARTMENT SPEAKS CONCERNING.....

"JUDGING FOREST TREES FOR FENCE POST USE"

The value of wood, from different forest tree species, for fence post use varies greatly. This fact is recognized by most farmers and those woods are selected which will give maximum service. There is, however, some question as to the comparative value of some forest trees.

Natural decay resistance of wood from common native species of forest trees lies in the heartwood. When untreated (chemically) the sapwood of practically all species has low decay resistance and generally short life under decay producing conditions. The decay resistance or durability of heartwood is greatly influenced by differences in the character of the wood, the attacking fungus and the conditions of exposure. Therefore a widely different length of life may be obtained from pieces of wood that are cut from the same species or even the same tree and used under apparently similar conditions.

Wood kept constantly dry or continuously submerged in water does not decay, regardless of sapwood or species. Moisture and temperature are the principal factors that effect the rate of decay and they vary greatly with the local conditions surrounding the wood in service.

In judging the probable durability of a post, species, size and amount of heartwood should be noted. Posts having checks, rotten wood or evident points of weakness should not be used or compared with those that are sound.

When selecting posts, the following facts should govern choice:

1. Large posts, having little or no sapwood, cut from rot-resisting species should be selected for wet ground.
2. Less rot-resisting species or smaller posts should be alternated with durable species and large posts.
3. End posts should be selected from the most durable species available and should be the largest posts used in constructing the fence.

General comparisons of the relative decay resistance of different species must be estimated. In the following table information collected from a number of sources is given on the durability of wood of different forest trees.

(Data on next page)

Some Interesting Forest Facts

It seems that when longer fences are built, the CCC in Hawaii probably will be called upon to build them. One of the newest assignments for this group of Federal employees in Hawaii is to construct a fence 40 miles long, 8,000 feet up the side of Mauna Kea, the highest mountain peak in the Pacific. This fence will enclose 68,000 acres of forest reserve, thus protecting the young trees from wild goats.

The idea of managing a forest as a farmer manages his farm is of relatively modern origin. Yet the actual care of woodlands dates back to nearly 2,000 years ago. China had what amounted to a department of mountain forests and the ancient Greeks wrote long articles on the care of the woodlands.

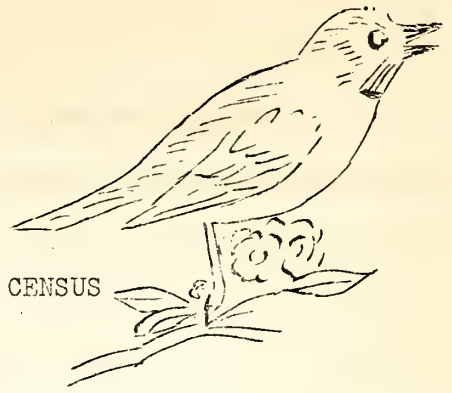
Comparative durability of the heartwood of different species
Listed in alphabetical order.

Very durable	Durable	Intermediate in durability	Non-Durable	Not suitable for fence posts
Catalpa	CRATAEGUS	APPLE	AMELANCHER	ASPEN
Cedar	Fir, Douglas wood dense	BEECH, BLUE	ASHES	Basswood
CHESTNUT	Locust, Honey	CHERRY, BLACK	BEECH	Cottonwood
Cypress southern	OAK, WHITE	ELMS	BIRCHES	Firs (true)
LOCUST, BLACK	Pine, dense southern yellow	Fir, Douglas	Buttonwood	PINE, RED
Junipers		Ironwood	BUTTERNUT	PINE, SCOTCH
Junipers		Larch	BUTTERNUT	PINE, SCOTCH
Mulberry, red	PLUM, WILD	OAK, CHESTNUT	Cucumber	PINE, WHITE
Osage, -orange	Red-bud	Yellow Pine, southern	Dogwood	ia Pine, Virgin-
Osage-orange	Red-bud	Yellow Pine, southern	GUM, BLACK	
Rodwood	Walnut, Black		Hackberry	WILLOWS
Rodwood	Walnut, Black		HEMLOCK	
Sassafras			HICKORIES	
			MAPLE, RED	
			MAPLE, SUGAR	
			OAK, BLACK	
			OAK, RED	
			OAK, SCARLET	
			Pine, Banks	
			PINE, PITCH	
			SPRUCE	
			TULIP	

Species listed in capitals are the most common.



WILDLIFE DEPARTMENT



THE AIMS AND PURPOSE OF A GAME CENSUS

For the first time in history a game census is being taken in Indiana and Armstrong Counties. It is being conducted in a thorough and scientific manner under the direction of the Wildlife Department of the Soil Conservation Service.

The Wildlife Department is just one phase of the Soil Conservation program. The men in this department are charged with increasing game animals, game birds and songbirds in Indiana and Armstrong Counties. Everyone knows that our wildlife has been decreasing rapidly for many years. Most important of all this wildlife are our birds. Bob-white Quail and Grouse, as well as songbirds, in which we are particularly interested, are among the greatest friends of all humanity. These birds devour countless insects and they are our only check on pests that are daily competing with us for the food supplies of the world. Insects are increasing, birds are decreasing. What can be the ultimate result if this continues? Some brilliant men who have devoted their lives to the study of insects tell us that unless some cataclysm occurs to this earth, the last remaining creature will probably be an insect perched on a lone live plant. This is an unpleasant picture, but a very likely one unless we aid and abet those agencies that are daily combatting insects. The most important of these agencies are birds. Wipe out birds from the face of the earth and the human race could not exist for more than nine years. Birds reduce the toll we are paying to insects by \$500,000,000 every year. This represents 25% of the damage done by insects. Double our supply of birds and we will be cutting down our insect damage by 50%, and this insect damage amounts to \$2,000,000,000 every year.

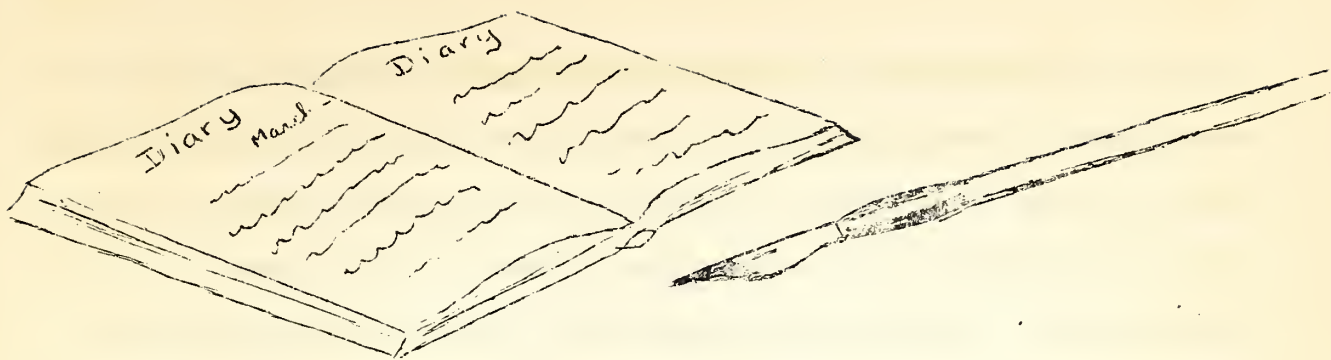
Our game census, of course, includes rabbits, pheasant, deer and all wildlife in the region that we can find. This census is being conducted in a careful scientific manner. A game census is being taken on 20 areas in Armstrong and Indiana Counties. These areas are each one mile square and when completed will give a 10% estimate of the total watershed area. When our game census is completed, we will then have a close estimate of the game population within this demonstration area.

One of the most important methods of preventing soil erosion is in the planting of trees and shrubs on hills too steep for cultivation, planting along stream banks and in the waste corners of fields. These trees and shrubs, many of which bear fruit and nuts, will not only prevent erosion, but they will furnish birds and other wild creatures with new homes. This vegetation will mean more food, more nesting sites and protection from enemies.

The importance of our census at this time is now clear. A year from now the trees and shrubs that have been planted on farms this summer, will have grown enough to furnish more homes for wildlife. Consequently, our census taken next year will show us the proportion of increase due to these plantings on the farms.

Wildlife has a very definite value to everyone whether he be farmer, sportsman or nature-lover. First it has a great practical value, particularly the birds on the farm. Second it is fine to have wildlife around for people who love the creatures of the wild. Third it has a real value for those who love the sport and recreation afforded by hunting.

Thus it will be seen that the wildlife department has a real job on its hands - a work that ties in directly with soil conservation and is highly important to the farm and community as a whole. Give your sympathy and understanding to help bring back our sadly depleted wild creatures.



NOTES FROM A CITY MAN'S DIARY.....1935

March 1---"I see by the evening paper where the government has allocated a large sum of money for use in the control of soil erosion in Indiana County. Wonder what "soil erosion" means, anyhow. I'll look up the definition in Webster's."

March 4---"Found out today what soil erosion means. After looking through an armful of agricultural books in the town library, I learned that the erosion of soil is a serious problem, not only in this part of the country, but in all sections of the United States. Seems that erosion was started in the early days, in this part of the country, by farmers cutting the timber off their land and not reforesting so that the soil would be protected when heavy rains swept the hillsides. A lot of other reasons were given, too. Apparently the rank and file of American farmers haven't followed the proper crop rotation; they permitted cattle to graze year after year on the same pasture; they plowed their land in the fall of the year and allowed it to lay bare and unplanted all winter. In the spring, melting snow would pour down the slopes of the plowed land carrying with it tons of valuable top-soil. I found out too, that top-soil, only a few inches in depth, is the kind of soil that produces the food we eat. The strata of earth under this top-soil--subsoil, the soils experts call it--is as worthless for agricultural purposes as last year's straw hat.

The sum of the whole matter is the fact that too many farmers are trying to raise crops in sub-soil mixed with a very slight amount of original top-soil. They are losing more of this top-soil every time there's a heavy rainstorm, even of brief duration. Funny that I never thought of soil erosion AS soil erosion before. Of course I've heard country folks talk a lot about their ground being "poor" but they never referred to the condition as erosion. Well, anyway, it looks as though Uncle Sam intends doing something about it. While the matter doesn't concern me--yet my curiosity is aroused just enough that I think I'll learn more about it."

April 20---"I'm finding out more about erosion each day. Several times in the past few weeks I've motored through the Crooked Creek Watershed where the Soil Conservation Service is at work, demonstrating to farmers how to check the loss of soil. I'm just now discovering how eroded the land really is. Why, there's hundreds of acres in the watershed virtually unfit, in their present state, for crop-raising; fields are scarred by what the Conservation Service men call "rills" and "gullies", formed by the force of rain-water rushing unchecked down the slopes. Other fields have been robbed of their top-soil by a process called "sheet erosion". Sheet erosion, I learned, is caused by a more uniform, widespread washing of cultivated fields by rainfall and, while not so noticeable as "gully erosion" is quite as destructive."

May 20---"I must be getting--shall I say--erosion conscious? Where ever I go nowadays I am brought face to face with the grim fact of soil erosion. The conditions even exist in my own back yard, here in town, where I have a small garden planted on a 10% slope. I noticed today that a number of tiny gullies were formed as a result of last night's rain."

July 20---"The Soil Conservation Service is making splendid progress in the Crooked Creek Watershed. Since spring, thousands of seedling forest trees have been set out on hillsides considered unfit for crop raising. "Check-dams" have been constructed in the deeper gullies; diversion ditches have been dug at the crests of steep slopes for the purpose of diverting rain water away from the fields and into harmless channels--- The value of erosion control measures is already obvious."

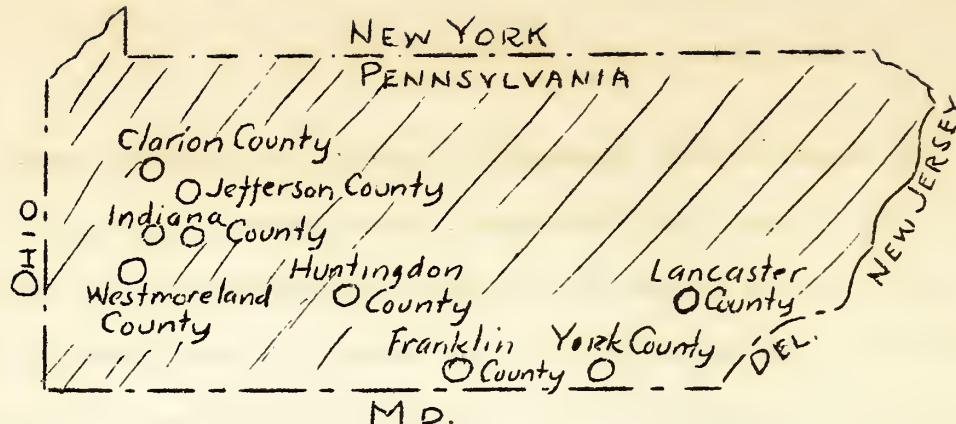
Sept. 1---"After having observed at close range, the activities of the Soil Conservation Service during the past few months, I have awakened to the realization that erosion control does concern me. In fact, it concerns city and country dweller alike. Agriculture is the basic industry of our country. Deprived of food, humanity would cease to exist. Unless the productive top-soil of the land is conserved, the nation will perish as others have perished in the dim vistas of forgotten centuries. Therefore, I have decided, it behooves all of us to become "soil erosion conscious."

A SOIL CONSERVATION "FIELD DAY".

On Tuesday October 29th, 1935, Robert D. Marshall, a progressive South Mahoning Township farmer and cooperator with the Soil Conservation Service, entertained and enlightened 300 Indiana and Armstrong County farmers on erosion control measures as practiced so successfully on his farm.

Despite a heavy rain the day was a highly successful one with opening speeches given in the morning by Dr. Austin L. Patrick, Regional Director of the New England and Middle Atlantic States, Dr. W. C. Lowdermilk, Associate Chief of the Soil Conservation Service, Washington, D. C. and Robert Marshall, the third speaker on the program.

Mr. Marshall, in a fine straightforward manner told of the great benefits to his farm by Soil Conservation methods and says that "Frankly, I feel that I have made more progress on my farm this last summer than I would have made in 15 years working along without the Soil Conservation Service".



LOCATION OF ALL PROJECTS IN PENNSYLVANIA

"SOIL CONSERVATION ACTIVITIES THROUGHOUT THE STATE"

During the past few months, the territory covered by the Soil Conservation Service in the state of Pennsylvania has gradually grown larger so that at the present time, in addition to the work being done in the Crooked Creek Watershed in Indiana and Armstrong Counties, work is either under way or about to start in seven other counties. These counties are: Westmoreland, Clarion, York, Lancaster, Jefferson, Huntingdon and Franklin.

The erosion problems in these other localities are very similar to those encountered in Indiana County, the main differences arising from different soil types.

Everywhere in these other counties, the Soil Conservation Service program has met with an enthusiastic reception. In some areas, it has been impossible to perform the work fast enough to satisfy the requests of the cooperators within the area.

The types of service given the cooperators are the same as those in the Crooked Creek Watershed. Steep slopes, and areas badly eroded are planted to trees; strip cropping practices are introduced; lands unsuitable for profitable cultivation are placed in pasture and permanent crops.

Gullies are controlled by various engineering devices, such as check dams, sod dams, diversion ditches and terraces. The diversion terrace is one form of structure which seems to appeal to farmers in many sections. The diversion terrace not only controls the water runoff, but does not necessitate the removal of land from cultivation.

Considerable work is being undertaken to enable the farmer to make the best use of his farm woodlot. Thinnings, salvage cuttings, and work of similar nature are being planned to demonstrate how the farm woodlot can be made into a paying crop.

Pasture treatment for lands removed from cultivation also plays an important part in the Erosion Control program in these various other sections. Leveling and seeding gully banks, and prevention of stream bank cutting serve as effective measures of erosion control.

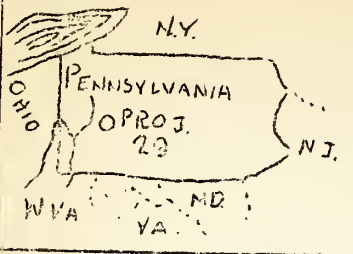
The Emergency Conservation Works organization which is directing the actual carrying out of the work on these various projects feels justly proud of the character of the work being performed for the citizens of the state of Pennsylvania. The quality of the work, however, is largely a reflection of the splendid type of men enrolled in the C.C.C. Camps. These men are doing a job of which everyone may well be proud.

In closing, it may well be said that if the enthusiastic welcome extended by the farmers of Pennsylvania towards the initial efforts of the Soil Conservation Service can be taken as a criterion, the ravaging waste of soil, by erosion, bids fair to be curbed in the very near future. This will go far toward insuring a profitable living for our farmers, which is the ultimate goal of this Service.



MEAN





MAP OF CROOKED CREEK EROSION CONTROL PROJECT NUMBER 29



① = Camp S.C.S. #1
⑥ = " " " " #6

- LOCATION -- Armstrong and Indiana Counties, Pennsylvania.
 AREA -- Approximately 120,000 acres.
 FARMS -- Approximately 200 in area.

U. S. DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE

Penalty for Private Use to Avoid
Payment of Postage, \$300

Indiana, Pennsylvania

Official Business